
Epithelialization in Wound Healing: A Comprehensive Review.

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Public Summary:

Significance: Keratinocytes, a major cellular component of the epidermis, are responsible for restoring the epidermis after injury through a process termed epithelialization. This review will focus on the pivotal role of keratinocytes in epithelialization, including cellular processes and mechanisms of their regulation during re-epithelialization, and their cross talk with other cell types participating in wound healing. **Recent Advances:** Discoveries in epidermal stem cells, keratinocyte immune function, and the role of the epidermis as an independent neuroendocrine organ will be reviewed. **Novel mechanisms** of gene expression regulation important for re-epithelialization, including microRNAs and histone modifications, will also be discussed. **Critical Issues:** Epithelialization is an essential component of wound healing used as a defining parameter of a successful wound closure. A wound cannot be considered healed in the absence of re-epithelialization. The epithelialization process is impaired in all types of chronic wounds. **Future Directions:** A comprehensive understanding of the epithelialization process will ultimately lead to the development of novel therapeutic approaches to promote wound closure.

Scientific Abstract:

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